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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/445,892 04/24/00 SEGAWA

S MAT-7855US

EXAMINER

IM52/0705

LAWRENCE E ASHERY
RATNER & PRESTIA
ONE WESTLAKES BERWYN SUITE 301
PO BOX 980
VALLEY FORGE PA 19482-0980

MAYES, M	
ART UNIT	PAPER NUMBER

1734
DATE MAILED:

07/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/445,892

Applicant(s)

Segawa et al.

Examiner

M. Curtis Mayes

Art Unit

1734



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 20) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

(1)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(2)

Claims 1-3, 5, 6, 9 and 11-13 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 10-218675.

JP 10-218675 discloses a method of manufacturing a multilayer substrate comprising: providing a shrinkage restraint greensheet on each side of a green sheet laminate; firing the laminate; and removing the ceramic powder residue of the restraint green sheets from both sides of the substrate by water jet or by dry type blast of projection material in a hyperbaric-pressure airstream. When the restraint greensheets are made of MgO, the projection material in the blast is fine particles of MgO, for example 10 micrometers particle size (translation pg. 2-3, specifically paragraphs 0017-0018).

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Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

(3)

Claims 1, 3 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hakotani et al. 5,370,759.

Hakotani et al. disclose a method for producing a multilayered ceramic substrate comprising: laminating an inorganic sheet on each side of a green sheet laminate, the inorganic sheet of a material which does not sinter at the firing temperature of the green sheet laminate and used to prevent shrinkage of the laminate; firing the laminate; and removing the unsintered inorganic material by conventional method such as sand blast or water-jetting (col. 7, lines 59-62).

Claim Rejections - 35 USC § 103

(4)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

(5)

Claims 4, 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-218675.

Providing the air used to perform water jet or dry type blasting at a pressure in the range of 3 to 5.55 kgf/cm², as claimed in Claims 4 and 10, would have been obvious to one of ordinary skill in the art to provide sufficient force of the water jet or dry blast to perform removal of the ceramic powder residue.

Performing water jetting or dry blasting on both sides of the fired substrate simultaneously, as claimed in Claim 7, would have been obvious to one of ordinary skill in the art.

Collecting the projection material after using to the remove the ceramic powder residue, as claimed in Claim 8, would have been obvious to one of ordinary skill in the art to conserve projection material for use to remove ceramic powder residue from other fired substrates.

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(6)

Claims 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakotani et al. 5,370,759.

Providing the air used to perform sand blasting or water-jetting at a pressure in the range of 3 to 5.55 kgf/cm², as claimed in Claims 4 and 10, would have been obvious to one of ordinary skill in the art to provide sufficient force of the sand blast or water jet to perform removal of the unsintered inorganic material.

Performing sand blast or water jetting on both sides of the fired substrate simultaneously, as claimed in Claim 7, would have been obvious to one of ordinary skill in the art.

(7)

Claims 2, 4-6, 8 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakotani et al. 5,370,759 in view of ^{Yam et al. and} Kim et al.

Hakotani et al. disclose that the inorganic sheets can be made of alumina (col. 6, lines 5-10).

Yam et al. teach that dry blasting to remove adherent materials involves directing abrasive particles to the surface by means of pressurized air at 20-110 psi while wet blasting is directing abrasive media to a surface using pressurized water or both air and water. Yam et al. teach that the abrasive media can be glass beads, alumina or sand and teaches that the abrasive particles can be collected and reused for additional blast cleaning (col. 1, lines 23-34, col. 4, lines 1-4, col. 5, lines 20-22).

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Kim et al. teach that alumina can be grit blasted using alumina as the abrasive and at a pressure of 50 psi (3.5 kg/cm²). Kim et al. further teach using coarse abrasive particles of 60 to 70 microns in diameter and finer grit of for example 12 to 20 microns in diameter (col. 4, lines 15-45, col. 6, lines 5-10).

It would have been obvious to one of ordinary skill in the art to have modified the method of Hakotani et al. for producing a multilayered ceramic substrate by providing alumina as the abrasive media for dry blasting or water jetting to remove the unsintered inorganic material as Yam et al. teach that abrasive media for removing adherent materials can be alumina and Kim et al. teach that it is known to use alumina to grit blast an alumina. The use of alumina abrasive particles to remove unsintered alumina from the substrate would have been obvious to one of ordinary skill in the art.

Providing the abrasive media, sand or alumina, for dry blasting or water jetting of a particle size of less than 10 microns or in the range of 0.1 to 150 microns, as claimed in Claims 5, 6, 11 and 12, would have been obvious to one of ordinary skill in the art as Kim et al. teach that coarse particles of diameter of 60 to 60 microns as well as finer grit can be used for grit blasting.

Dry blasting or water jetting at a pressure in the range of 3 to 5.5 kg/cm², as claimed in Claims 4 and 10, would have been obvious to one of ordinary skill in the art as Yam et al. teach that dry blasting to remove adherent materials involves directing abrasive particles to the surface by means of pressurized air at 20-110 psi and Kim et al. teach that alumina can be grit blasted at a pressure of 50 psi (3.5 kg/cm²). The particular pressure used for dry blasting or water jetting

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would have been obvious to one of ordinary skill in the art to achieve removal of the unsintered inorganic material and could have been arrived at without undue experimentation.

It would have been obvious to one of ordinary skill in the art to have collected the abrasive media after dry blasting or water jetting as taught by Yam et al. for reuse for additional blast cleaning.

Conclusion

(8)

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references disclose providing shrinkage or contraction suppression greensheets and removal after sintering.

(9)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Mayes, whose telephone number is (703) 308-1977. The examiner can normally be reached on Monday-Friday from 7:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino, can be reached on (703) 308-3853.

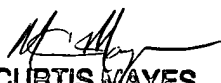
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The Official FAX phone number for this Tech Center 1700 is (703) 305-7718.

The Unofficial Fax phone number is (703) 305-7115.

When filing a FAX in Tech Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with PTO that are not for entry into the file of the application. This will expedite processing of your papers.

The receptionist number for Tech Center 1700 is (703) 308-0661.


CURTIS MAYES
PRIMARY EXAMINER
Art Unit 1734
June 28, 2001